



# California

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# THE EDITORS SAY:

## How Straight Our Course?

OUR first editorial promised to give every attention possible and desirable to the goal of making our research reporting "practical". We felt that such a goal was commendable and would make the new publication a valuable source for research information and stimulating facts. The extent to which we have succeeded in steering a true course, we must leave to our readers. Where do we go from here?

In this issue we have published, as the feature article, a "navigator's report". Dr. Brownell's penetrating commentary on the course of educational research cannot help but serve to make us all, including the publishers of this *Journal*, rededicate ourselves over and over again to the fundamentals of sound, scientific research. If we will but maintain the same integrity of purpose and the same exactitude of procedure that characterize the work of the nautical or aeronautical navigator, we will not so often need to feel the doubt and concern expressed in the query: "Are we putting research to work?" For that question, in our field of discipline, is very like the navigator's question: "Are We on Course?"

Dr. Brownell warns us against the tendency to alibi for ourselves that "we do not have our hands on the wheel". Neither does the navigator! We will carry our apprehension to the "bridge" in noting that the vessel is wavering or making poor headway. But, as researchers, we are not responsible for the "steering". Assuming that we plot a true course, the ship will ultimately reach port.

Dropping the maritime metaphor, there is the suggestion in Dr. Brownell's analysis that what we are doing and reporting in educational research is really worthwhile. He reiterates that research is at work in a positive fashion and that it is helping to reshape the direction of education. We have scored enough to "point with pride" against those who "view with alarm."

One of the most pertinent observations in the Brownell article is the admonition to beware of going to the other extreme of being lured by the "siren song" of *practicability*. There is the ever-present danger, in so doing, that we may either forget or shy away from continued study of what for a time may appear to have no immediate value, or for which our goals are not immediately definable. We should remember that ships of the sea and the air are now guided uneeringly because men were once upon a time curious about stars.

*Continued on Page 73*

# Are We Putting Research To Work?

WILLIAM A. BROWNELL  
University of California

**MY** SUBJECT has a disarming appearance of simplicity. Seemingly I am asked only to state that the results of educational research are finding their way into practical application, or that they are not. As questions go, this particular one is brief, clear, and to the point. It could be inferred that it is answerable in a manner no less direct and unequivocal. Perhaps so; but if such an answer is possible, I am not the one to suggest it.

Far from being simple, in my opinion our question has many ramifications and complications. To answer it requires, on the one hand, accurate and detailed knowledge of the full range of educational research and, on the other, equally complete knowledge of what is happening in our schools. I doubt that anyone can make a valid claim to expertness in both respects.

In 1910 or 1915 an educator, without immodesty, could have asserted intimate acquaintance with the whole of our research literature. In 1951 such an assertion would be promptly challenged. In the intervening years the volume of research has expanded many fold. New educational areas have been opened to investigation. Old problems have been found to be amenable to fruitful study by new techniques, often with results at variance with those previously announced. The mere task of keeping up with the stream of publication, of reading all that is printed, to say nothing of assessing it and digesting it, is beyond the capacity of any one individual. We researchers have had to become specialists and must now be content with being really competent in but one or a few of the many fields of research endeavor.

If no one can speak authoritatively for educational research as a whole, certainly no one can speak authoritatively about practices in all phases of schooling—about what is happening in school finance, in school housing, in school-community relations, in the in-service education of

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teachers, in curriculum construction, in the classification of pupils, in the evaluation of learning and of professional performance, in changes in teaching methodology. School practice in this limited list of practical activities is far from uniform, even in school units of small size. Investigations of practices regularly report a condition of wide variability, a condition which greatly complicates the task of finding an answer to our question. One can say with confidence only that such-and-such research findings are being applied in this place and that. The day is far distant when we may expect *all* sound research findings to affect practice in *all* schools.

What I have said amounts to a complete disclaimer of my ability to give a definitive answer to our question. (Not too subtly, it also implies that I am not alone in my incompetence.) Be that as it may, I shall do what I can. I should state at once that, almost always when I shall be specific, I shall be speaking as one whose research activities have been confined to the investigation of problems relating to the processes of learning and of teaching. I have undertaken to fill in some of the larger holes in my knowledge by conferring with colleagues. It is no fault of theirs that my efforts have been incomplete and that, accordingly, I may be guilty of errors both of omission and of commission.

In what I shall say, I shall make free use of the first-person pronoun. I shall employ it in the singular number when I am venturing private opinions; and I shall employ it in the plural number when I shall include you, along with myself, in the group who devote time and energy to educational research. My remarks will be organized around three points. At first blush there may seem to be little consistency among these points or perhaps in what I shall say about them. I shall hope, however, that after we have left off "blushing," some internal logic may be in evidence.

## The Responsibilities of Research Workers

The second word in our question disturbs me a bit—"Are *We* Putting Research to Work?" The "we" may refer to educators in general, thus including classroom teachers, supervisors, curriculum specialists, and administrators; or it may refer exclusively to *us*. If the latter reference is intended, if we as producers of research are by implication obligated to see our findings through to application, then I should want to demur. I doubt whether this responsibility may properly be laid upon us. Even more, I doubt whether we could meet the responsibility were we to try.

Consider the limitations under which we operate as research workers. Often we find it no easy matter to secure the authority we need to make our investigation, authority to examine records on file or to collect essential data, or to gain the cooperation of school personnel in our studies, or

to prescribe and control the activities of classroom teachers in the light of our purposes. Even when we have this amount of authority, it is rarely indeed extended to the point where we can actually make the changes dictated by our research. Authority of this kind typically remains in the hands of some administrative superior and at times in the hands of the community itself. We may demonstrate the ineffectiveness of home work, as we have often done; but we cannot ban it. (Nor, sometimes, can our principal or our superintendent, for that matter!)

Consider also the many instances when, quite apart from the matter of authority, research results cannot be adopted and implemented because of sound practical reasons. To illustrate, research has shown that the lighting in most school plants is inadequate and has indicated measures to correct the situation. Yet, the cost involved in changing over from sub-standard to standard equipment may be prohibitive. Are we research workers to be blamed for such failures to put our research to work? Are we to be charged with neglect of duty?

It is unprofitable, certainly in this audience, to elaborate the reasons why we cannot command compliance with our recommendations. We know them too well, and our impotence is at times highly irritating. Our critics, whoever they may be, may agree that we are not wholly at fault when our findings get no recognition in school practice; but they sometimes come at us from a different angle. They insist that educational research must at least be *susceptible* to direct application and that there is no place in education for research that does not meet this criterion. Particularly they object to investigations that they describe as academic and theoretical. Now, *is* there any justification for us to study problems for which we ourselves can see no immediate usefulness?

In the older sciences, such as Chemistry and Physics, this question is irrelevant. Complete freedom is accorded the research worker, and he is encouraged to study anything that attracts his fancy. Moreover, this policy has paid off again and again, both in university departments and more recently in the larger industries of the country. Research results, for years regarded as being of purely theoretical interest, have later been turned to practical advantage, if not by the producers of the research, then by others. Ways have been found to bridge the gap between so-called fundamental research and application. The engineer—electrical or chemical or mechanical—takes the results of basic research and finds out what they mean in practical situations. In so doing he engages in activities very like those which yielded the data and the principles with which he starts. If he is rigorous and “scientific” in his activities, he, too, in my opinion, may be said to be doing research.

As I see things, the situations with respect to research in the older

sciences and in education are more alike than they are different. In education, too, we can recognize two kinds of research: (a) that which is undertaken without regard for its immediate values and (b) that which is intended to affect school practices directly and at once. (Actually of course our studies do not fit neatly into these two categories.) Those of us who engage in type (b) are concerned with the implications of our findings, even if we cannot secure their acceptance and implementation. And this kind of research is important. No one more than the investigator himself should know so well the educational significance of his results, and I like it when he obligates himself to point out their significance.

This is, however, far from saying that those of us who engage in type (a) research must subject ourselves to the same obligation. To give an example: we need to know much more about the way children learn to read and to do arithmetic, but research in these areas may make its principal contributions, not to improved instruction, but to a sounder psychology of learning. What is there about research with rats in threading mazes that makes it more valuable for learning theory than is research with children in humanly meaningful learning tasks? If educational research in the learning of the school subjects affects general learning theory favorably, is it therefore any the less worthy of encouragement? Or, to take another example: suppose a student of school finance, starting with a problem of practical importance, deserts his original interest and gives himself to an investigation of wider significance. Suppose further that his research produces new formulas or a new set of principles for the distribution of funds that are only remotely related to school finance.<sup>1</sup> Is he to be charged with neglecting a responsibility?

To conclude this phase of the discussion, I think it safe to say that there is plenty of room in education for all kinds of research. It would be a serious mistake to limit research activity to the investigation of immediately practical problems. And, those of us who do research should object to any efforts so to circumscribe our labors and should demand for our fellows the same freedom regularly given those who do research in other areas.

Perhaps in insisting that we cannot be expected to implement our findings and that we must not be limited to the study of practical problems alone, I have implied that as a class we live complacently in an ivory tower. If so, this implication is entirely fallacious, and there is plenty of evidence to the contrary. Note, first of all, that we publish our reports,

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<sup>1</sup> This hypothetical illustration is not so hypothetical after all. In 1936 Francis Cornell proposed a method for measuring tax-paying ability which at the time was viewed as a theoretic rather than a practical contribution.

clearly in the hope that, with our findings thus made available, they will be used. Note, again, the frequency with which we are retained as experts to consult with school officials on problems differing all the way from designing a school plant to setting up a program of remedial instruction. Note, still again, how often we are invited to prepare professional texts in our specialties in order to raise the quality of training both in the preparatory stages and in in-service programs. And, last of all, note our voluntary attempts to make our findings accessible and useful generally to those who grapple with educational problems in practical situations. In this last category I would call attention to: (a) the *Review of Educational Research*, published by the American Educational Research Association five times a year in three-year cycles so that the research literature in each of fifteen areas is summarized and digested periodically; (b) the monograph, *The Implications of Research for the Classroom Teacher*, published by the National Education Association in 1939 as a joint venture of the American Educational Research Association and the Department of Classroom Teachers, and a similar monograph sponsored by, and soon to be published under the auspices of the Association for Supervision and Curriculum Development; and (c), most impressive of all, the two editions of the *Encyclopedia of Educational Research*, remarkable alike for their scope and their quality, prepared under the distinguished direction of Walter Scott Monroe, now a resident of this state. We may well take pride in our record of accomplishment, a record which completely refutes any charge of our being indifferent to educational practice.

The truth is, I think, that as research workers we go about as far as we can go, properly and realistically, in putting research to work. We have the special function of *doing* research; and it could be argued that if we went much further in implementing our findings, we should do so only at the risk of having to reduce our outpost of research itself.

## Research at Work

There is a general impression that our research is sterile, that little of it ever affects school practice. If by this we mean that we can see no place where this particular study or that one has had any influence, I dare say the impression is correct. We could easily list hundreds of such instances. On the other hand, this condition is far from signifying that research as a whole has been fruitless. I suppose we get impatient. We want to see education made over in the light of our findings, and that at once. In this connection, it is well for us to remind ourselves of the youth, even of the infancy, of educational research. Educational research is little more than thirty-five or forty years old. What is to be expected of so young a movement, vigorous as it has become?

I can speak at first hand only of the effects of research in teaching and learning. In this area I do not hesitate to say that research has had powerful consequences. Consider what has happened in the teaching of reading. Investigations of children's vocabularies, of their reading interests, of perceptual and central factors in the reading process—such investigations have produced a new body of instructional material and a new methodology for the subject.

I remember very well my first few weeks in Grade 1 at the turn of the century. On the wall was a large chart. In the left column were the letters of our alphabet. In parallel columns were all the sounds most commonly associated with each separate letter. For weeks we children stood before this chart, ten or fifteen minutes a day, while the teacher with her pointer called upon us to produce the sounds represented in various cells. Next we moved to Reader One—not to a reader primer, or to a pre-primer, or to readiness experiences as today, but to Reader One. In those years reading was a serious business! On the first page, taking half the space, was an atrocious woodcut which, even now, I reluctantly identify as showing the hero of our tale. His name was Willie. He sat at a fixed desk examining a slate (*that dates me!*) with what appeared to be avid (if inexplicable) interest. Then we “read”:

“Do you see Willie?”

“Yes, I see Willie.”

“Has Willie a slate?”

“Yes, Willie has a slate.”

“Do you see Willie’s slate?”

“Yes, I see Willie’s slate.”

You will concede, I am sure, that the plot was nothing to brag about. Nevertheless, we spent days, at least two weeks, on that page, supposedly learning to “read,” though as a matter of fact we quickly memorized the series of six sentences and were able to “read” them with the book held behind us, even when closed.

I shall not take time to contrast my first reading lesson with those prevalent today, for the contrast is unnecessary. You could point out many differences, most of them highly significant for learning and teaching. The point is that the changes are chiefly attributable to research—research in reading, research in child development, research in type face and page format, and so on and on. True, we have not yet succeeded in getting all teachers to know, understand, and use all that has been discovered about desirable learning activities, about their optimal sequence, and the like; but the bases for improvement are there, and they have been laid by research.

What has been said about reading as a school subject holds equally

well for arithmetic, save that we are not so far along in the latter subject. Let anyone who believes that arithmetic today is just about what it was a quarter century ago compare children's textbooks written in 1925 or 1930 with those in common use nowadays. Arithmetic at the earlier time was a tool subject, taught mechanically by drill procedures: "This is the way you do it; now do it." Research revealed the poverty of instructional results following from this program. Research did more than that. It showed that children were called upon to learn too many things in isolation; that mastery, if such it could be called, was transitory; that grade placement was unsound; that readiness was neglected; that intelligence was stifled; that, with it all, instruction in arithmetic cultivated undesirable attitudes, a fact reflected in a marked decline in the appeal of the subject in the higher grades. Research established these negative conditions, but it also showed the way to improvement. We are presently seeing the subject made over into a body of content which puts a premium upon meaning, understanding, functional ability. The gains, made possible through research, are in evidence in local and state courses of study and in teachers' guides, as well as in textbooks.

Limitations of space prevent rehearsals of the actual effects of research in spelling, and of the growing effects of research in the social studies and in others of the subject matter areas. In some of these areas our research is not extensive; but such as it is, it has been influential. No one knows this better than do the publishers of school texts. Let anyone sign his name to but a few research reports in any subject, and he will immediately be called upon by publishers' representatives, contract in hand.

I am confident that the situation as I have described it with respect to research in teaching and learning can be duplicated elsewhere in education. For example, my attention has been called to the far-reaching consequences of the research on school finance by the group of investigators at Teachers College, Columbia University. The idea of setting up and financing a foundation educational program for a state, and the method for doing so, promulgated only thirty years ago is now generally accepted. Fully forty-one of the states have moved in this direction, and about half of them may be said actually to have established foundation programs of considerable merit.

The practical impact of research on school practice is very great indeed. Research is at work, and to a degree which we do not always appreciate. Everywhere where there has accumulated a body of sound research, changes have occurred, or changes are in process. Where there is no such literature, changes could hardly be expected; and there are many such places. It is perhaps because of these relatively unexplored areas that we tend to deprecate the slow rate of *general* change. The solution is not

to deplore the slowness of change, but to produce the research which alone can remedy the situation.

## The Values of Making Haste Slowly

Customarily five or ten years elapse between the publication of research and application of findings. This time lag is regarded by many as most unfortunate: research results should be acted upon at once. When I hear or read statements of this kind, I am inclined to take a different position, namely, that the time lag is a blessing in disguise and that we are better off with it than we should be without it.

A delay in applying research findings has the advantage of giving a chance to assess the validity of data and conclusions and to discover other facts, not in the data themselves, that may affect application. We should know the potential values of a time lag from bitter experience. As an illustration I need only to remind you of the ill-considered practices based upon intelligence tests and of the unbridled claims made for these tests in the early years after their appearance. Had we been a bit more critical, and had we taken time to investigate more widely and more thoroughly, we might have saved ourselves considerable embarrassment and many children disturbing unpleasantness and harmful effects.

School practice is at times continued in opposition to what appear to be conclusive research findings, and school practice in some of these cases has been correct. In arithmetic, for instance, some thirteen of fifteen studies found in favor of a method of subtraction known as equal additions. Meanwhile, school practice held obstinately to an alternative procedure known as decomposition. Only recently have research data begun to appear that undermine the claims for the former procedure and support what the schools have been doing all along.

In the instance just cited, the earlier research had disregarded important dimensions of learning, having been designed according to a conception of the subject no longer popular. Certainly this state of affairs is not unique in the annals of educational research, and it may well be commoner than we realize. To the extent that it is typical rather than atypical, we must not urge prompt acceptance of our findings. To do so may be premature and ill-advised. A period of critical testing, to verify or modify or reject tentative research findings, would seem to be a wise precaution against hasty action.

We all recognize that, in research, whether in learning or in anything else, we must somewhat oversimplify our problem if we are to make any progress at all. Once our study is completed, however, we must take cognizance of factors temporarily eliminated from consideration, in order to

orient our findings realistically within the entire situation of which our problem is but a part. Under no circumstances can we safely continue to ignore possibly crucial aspects of the problem area merely because they were not originally within the purview of our investigation. Research results are commonly expressed in terms of averages—average cost, average load, average achievement. By their very nature averages are insensitive to exceptions and may therefore be invalid in special situations. Such has proven to be the case in school finance, to cite this area once again. The distribution of federal and state funds has in the past been based upon averages, with the consequence that allocations to local districts are sometimes unjustly inadequate or disproportionately generous.

We must admit that part of our research is unworthy of application, not because of unidentified factors (as just explained) but because of its inferior quality. To put the matter bluntly, some investigators are simply not competent to make the studies they make; they know neither the field in which they operate nor the techniques they employ. They flit about over the length and breadth of education, now "investigating" a problem in teaching, now one in administrative organization, now one in curriculum design, now one in community relations, now one in playground equipment, now one in teacher qualifications—all with equal self-confidence and with the conviction that their findings are well established. They do not stay long enough in a problem area to make a real contribution, but they are in no wise concerned about the matter.

I am reminded of a book review by a Mr. T. Livingston Scholz which appeared in the *Journal of Educational Psychology* twenty years or so ago. Mr. Scholz was reporting on a doctoral study in which the investigator attempted to predict teaching success. The review went about as follows: Mr. Scholz commended the student for his industry. He (the student) conceded that he did not have a very good criterion of teaching success; but he gave a wide range of tests to his subjects and then correlated the test scores and other ratings against his criterion, finding the coefficients all to be too low to be of much use. To Mr. Scholz all this appeared to be a good deal like the method of weighing hogs employed in a certain backwoods section where there were no scales. First the farmer tied a large box to one end of a fence rail, which he then balanced across the top of the fence. Next, he tied the hog to the other end of the fence rail. Then he put rocks into the box until box and hog balanced each other. Finally the farmer *guessed* the weight of the rocks!

My remarks—and the implication that the story is uncomfortably applicable to much more than the one research study—may seem to be unduly harsh. Perhaps so, but I doubt it. As I read research in our periodicals, I too often get the impression of a dilettante at work—or at play. It is a refreshing experience when I can feel that some investigator has

worried and sweat and prayed over his study. My notion that too generally research represents the passing interest of persons who hake their inquiries here and there is given support by a recent tabulation of research workers.<sup>2</sup> According to this tabulation, publication of only three or four research reports in any of the subject matter areas places the individual in the top ten per cent of research workers from the standpoint of productivity. The number of persistent, consistent producers of research in any one subject over the years can be counted on the fingers of your two hands. Is it any wonder that a sizeable fraction of our research is of questionable usefulness? And is it any wonder that I should argue for delay in the application of research findings until we can be sure of their validity and value?

### Summary

Let me recapitulate briefly what I have said in trying to answer the question, Are We Putting Research to Work? (a) As research specialists we are accepting and meeting fairly well the responsibility to improve educational practice. We do not have the authority or the means to implement our findings, but in our professional writing and in our other professional activities we are doing what we can to bring our research to bear upon practice. And what we are doing is considerable. At the same time we have the right to investigate fundamental questions even when they do not relate immediately and directly to practice. (b) Far more than is generally realized, research results *are* at work in modifying educational procedures and programs. Good examples are to be found in improvements in children's texts and learning materials and in teachers' guides and courses of study. Equally good examples are to be found in other areas of research. (c) Yet, it is possible to move too quickly from research results to practical application. There is the danger of error in premature action. It is better to postpone application and to take time to test the soundness and the usefulness of our research results before recommending their acceptance.

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<sup>2</sup> The tabulation, made by Lawrence J. Smith, has since been published in his article, "Research Workers in Selected School Subjects," *Journal of Educational Research*, 45:255-74, Dec. 1951.

# Educational Legislation Obtained through the Initiative and Referendum

J. WESLEY BRATTON  
Long Beach State College

**W**HEN the electors deem that the state legislature has been negligent of their needs or that vested interests are interfering with the legislators' duties in representing all the people of the state, they seek means of obtaining the desired legislation through the electors themselves who are the final authority in their own government. Such action can be taken in those states whose constitutions provide for direct legislation in the form of the initiative and/or the referendum.

Since the initiative and the referendum have been used to obtain educational legislation in various states, a national study of all direct measures would indicate whether there had been any similarity in educational problems demanding popular electoral participation, and what aspects of the use of direct educational legislation should be studied more comprehensively.

## Purpose of Study

The purpose of the study was to determine the extent and nature of all state-wide education measures involving the initiative or referendum in the United States prior to and including 1948, with special application to the State of California. Specific problems of the investigation were: (1) to ascertain what educational legislation has resulted from the use of the initiative and the referendum, (2) to ascertain what aspects of education have been the object of direct legislation, and (3) to determine the degree to which the people have evidenced, by voting, their desire to use direct legislation in educational matters.

## Procedure

A thorough canvass was made of library catalogues and indices. Bibliographical investigation and a review of the literature in the field revealed no books or manuscripts concerning the use of the initiative and

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referendum in educational legislation. The materials found were solely in the field of political science, having to do with national reviews of direct legislation *per se* or analyses of direct legislation in some of the individual states.

In order to insure accuracy in the findings of the study, it became necessary to employ the method of historical research, limiting the sources of data to the official records of the states having constitutional provision for direct legislation. Such records included ballot pamphlets or their equivalents, sample ballots, abstracts or statements of vote, statutes of the several states, the constitutions of each, and other official state publications.

## Findings

### VARIATIONS IN INDIVIDUAL STATE PROVISIONS FOR USE OF THE INITIATIVE AND REFERENDUM

1. Nineteen states make constitutional provision for both the initiative and the referendum. Two provide for the referendum only.
2. Thirteen states make provision for both initiated statutes and the constitutional amendment. Six provide for initiated statutes, but not for initiated amendments.
3. Two states provide for both direct and indirect statutory initiative. Two others qualify in this category if the legislature has failed to act on the proposed measure.
4. Twelve states provide for direct statutory initiative, while two others make conditional provision for such.
5. Five states make no provision for indirect statutory initiative.
6. Fifteen states set the number of required petition signatures in percentages, ranging in the various states and for different types of petitions through 3, 5, 7, 8, 10, 15 and 25 per cent of the electors.
7. Five states set definite minimum values for the necessary number of petition signatures. Nine require the distribution of signatures by districts, or impose some geographical restriction.
8. Thirteen states base the computation of the number of required petition signatures on the total vote for governor at the last election, two on the vote for justice of the supreme court, one on the vote for secretary of state, and one on that for the office that polled the highest number of votes.
9. Five states impose different majority restrictions governing the adoption of initiated measures. In all other states, measures are adopted by a majority of votes cast thereon.
10. Twelve states require the text and ballot titles of proposed measures printed in pamphlets available to each voter; in all but three of these, the pamphlets also contain arguments for and against each proposal. Eight other states require the text and ballot titles of measures to be printed in the newspapers, while one requires both newspaper publication and the pamphlet.

## FINDINGS REGARDING DIRECT EDUCATIONAL LEGISLATION IN CALIFORNIA

1. From 1912 to 1948 eighteen legislature-proposed education amendments have been submitted to a vote of the people, of which fourteen were adopted.
2. Of the thirteen educational measures submitted through popular petition, five initiative proposals were adopted and the one referendum was sustained.
3. In each category—legislature-proposed amendments and initiated measures—the percentage of adoption on propositions affecting education was greater than on the total number submitted.
4. Of the total direct educational measures, eight initiatives and the referendum were fiscal. Of these, five initiatives were adopted and the referendum was sustained.
5. There was no appreciable difference between voter participation on legislature-proposed education amendments and initiated education measures.
6. Of the four initiated education measures receiving the highest voter participation, two were concerned with school finance, one with pupils, one with curriculum.
7. At no election did an education proposition receive the highest voter participation of all measures submitted.

## FINDINGS REGARDING DIRECT EDUCATIONAL LEGISLATION IN THE UNITED STATES

1. In all states, a total of ninety-five initiated education proposals and twenty education referenda were submitted, of which thirty-nine initiatives were adopted and sixteen referenda sustained. (See Table I)
2. Forty-five of the total one hundred fifteen measures were submitted in the three far-western states, while none appeared in any state farther east than Michigan.

TABLE I

## PETITIONS SUSTAINED IN INITIATED EDUCATIONAL LEGISLATION IN THE UNITED STATES

	Initiatives		Referenda		Petitions Sustained	Percentage Sustained
	Proposed	Adopted	Proposed	Sustained		
Arizona.....	4	2	2	2	4	66.7
Arkansas.....	9	5	1	1	6	60.0
California.....	12	5	1	1	6	46.1
Colorado.....	9	2	2	2	4	36.4
Michigan.....	5	1	-	-	1	20.0
Missouri.....	7	1	1	1	2	25.0
Montana.....	4	2	-	-	2	50.0
Nebraska.....	2	0	-	-	0	00.0
North Dakota.....	6	5	-	-	5	83.3
Oklahoma.....	12	5	2	1	6	42.9
Oregon.....	14	5	8	5	10	45.4
South Dakota.....	2	0	1	1	1	33.3
Washington.....	9	6	2	2	8	72.7
Totals.....	95	39	20	16	55	47.8

3. In elections following three periods of national crisis — 1920, 1932, and 1946 — the number of direct educational measures submitted in the United States was greater than in other years.
4. Although more amendments were submitted than statutes, only 28 per cent of the education amendments were adopted while 55.5 per cent of the proposed statutes affecting the schools became law.
5. The average voter participation on initiative measures was 78.4 per cent; on referenda, 68.1 per cent.
6. Twenty-two measures — five amendments and seventeen statutes — became law by minority vote.
7. Seven measures (in six states), having been rejected, reappeared at later elections, usually with but slight rewording of the ballot titles. Five were successful in final adoption. Each polled higher voter participation upon resubmission.
8. The largest number of measures submitted in any one subject category of education pertained to finance, but the highest percentage of voter participation occurred on proposals relating to pupils. (See Table II) A higher percentage of petitions were sustained on curriculum measures than on those concerning any other phase of education.

TABLE II

PERCENTAGE OF VOTER PARTICIPATION ON SUBJECT CATEGORIES  
OF MEASURES\*

	Higher Education	Organi- zation	Finance	Instructors	Pupils	Curriculum
Arizona-----	-----	(1) 56.36	(2) 54.91	(1) 61.00	(1) 52.64	(1) 51.12
Arkansas-----	-----	(3) 87.82	(3) 75.17	-----	-----	(4) 84.86
California-----	(2) 72.62	(1) 64.23	(7) 72.19	(1) 62.61	(1) 83.93	(1) 83.40
Colorado-----	(1) 32.65	(3) 55.12	(6) 72.14	(1) 29.89	-----	-----
Michigan-----	-----	-----	(3) 78.13	-----	(2) 96.47	-----
Missouri-----	-----	(2) 75.51	(3) 79.87	(3) 64.23	-----	-----
Montana-----	(4) 76.39	-----	-----	-----	-----	-----
Nebraska-----	(1) 87.09	-----	(1) 90.67	-----	-----	-----
North Dakota-----	-----	(2) 93.11	(3) 77.06	(1) 93.90	-----	-----
Oklahoma-----	-----	(1) 94.47	(10) 83.66	(1) 95.09	-----	(2) 81.41
Oregon-----	(13) 78.69	(1) 84.07	(6) 82.90	-----	(2) 83.86	-----
South Dakota-----	(3) 82.99	-----	-----	-----	-----	-----
Washington-----	-----	(1) 70.53	(7) 77.08	(1) 81.60	(2) 83.08	-----

\* Numeral in parenthesis indicates number of measures submitted.

## Conclusions

### CONCLUSIONS REGARDING DIRECT EDUCATIONAL LEGISLATION IN CALIFORNIA

1. The adoption of a larger percentage of legislature-proposed education amendments than direct education measures does not necessarily indicate greater confidence in the legislature than in the initiative process.
2. The negligible difference in percentage (.29) between voter participation on

educational amendments proposed by the legislature and initiated measures affecting the schools indicates that voting interest on educational matters is not influenced by the source of proposed legislation.

3. Less interest by the California electorate in problems of education than in other aspects of state government is indicated by greater voter participation on non-educational direct measures than on those affecting the schools.

#### CONCLUSIONS REGARDING DIRECT EDUCATIONAL LEGISLATION IN THE UNITED STATES

1. The use of direct educational legislation on a national scale has not been extensive, revolutionary, or reactionary.
2. There is no evidence of capriciousness on the part of petition initiators in proposing education measures.
3. The combined electorates tended to adopt initiated educational statutes more readily than initiated educational amendments, therefore a measure has a better chance of adoption if submitted as a proposed law.
4. The voters rescinded legislative action through the use of the referendum to a much larger degree than they defeated initiative measures.
5. A high degree of voting discrimination is indicated by the electorates having sustained less than one half of the direct measures submitted.
6. The number of initiative measures that have become law by minority approval points toward a need for the development of an informed electorate.
7. Resubmission of a measure tends to increase voter participation on that measure and to insure its adoption, although there is no evidence that increases voter participation *per se* influences either the adoption or rejection of a proposal.
8. Various state education associations have expedited direct education legislation, both in its initiation and its adoption.
9. Greater consideration by legislatures to the will of the people and the needs of the schools is indicated by the absence of referenda on educational legislation since 1938.

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### SPECIAL RATE ESTABLISHED FOR GRADUATE STUDENTS

On the recommendation of the editorial board, the board of directors of the California Teachers Association has approved the establishment of a special student subscription rate of \$3.00 per year for the *California Journal of Educational Research*. Applications for such subscriptions must be submitted to members of the editorial board for approval. Names and addresses of such board members may be found on the inside front cover of this issue. The new subscription rate goes into effect immediately and may also be applied to securing the first two volumes (1950 and 1951) of the publication.

# Should College Students Be Told Their Intelligence Test Scores?

HAROLD D. CARTER  
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**S**HOULD students be told their scores on intelligence tests? How will they react to the information given? One way to find out is to ask them. In the study reported here, groups of college students were told their percentile scores on the *American Council on Education Psychological Test*. They were then asked to answer five objective questions and to supplement their answers by free comments.

The problem here investigated is not one to be answered finally through any one study. It seems likely that the reactions of pupils to being told their test scores are dependent upon a number of conditions. For example, the reactions may depend upon the pupils' ages, their educational level, their emotional stability, the amount of previous information they have obtained, their beliefs concerning the nature of intelligence, the manner in which the information is given to them, and their individual tendencies to consider the information in the light of other available facts.

Is it "dangerous" to tell pupils their scores? The basic viewpoint in this study is that data should be collected in order to answer the question. The belief that frank reporting of intelligence test results is hazardous is held by many persons in the absence of any information which might shed some light upon the true facts. The attitudes often expressed on the topic seem to be rooted in the experience of those who serve as counselors to maladjusted persons. They appear to give the average person too little credit for having some degree of common sense and emotional stability.

## Data and Procedure

The *American Council on Education Psychological Test* was administered to students enrolled in a class in Educational Psychology. The

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date of testing was announced in advance and students were told that participation was voluntary. They were also told that their scores would be reported to them. Of the 160 enrolled in the course, 123 took the test. Their percentile scores (Q, L, and Total) based upon national norms for college students were given to them individually. Students were then told to come in for private discussions if they wished to do so. Instruction in the course had already dealt with such topics as the nature and measurement of intelligence, the validity of intelligence tests for prediction of school success, and the uses of tests in guidance and counseling.

Most of the students in the course were juniors, although a few seniors and graduate students were included. Nearly all the students had had at least one course in general psychology, and many had had three or four such courses. The group might fairly be described as a typical upper division college class, perhaps deviating slightly in the direction of superior intelligence and scholarship.

## Results

Table I presents the frequency distribution of percentile scores on the total test. The range is from the fifth to the ninety-ninth percentile, and the median is at the 68th percentile. The normative significance of these results is partly lost because the test was administered with some reduction of the time allowed for practice exercises. On the basis of experience, showing that college students do not need all the time allowed for the practice exercises, the conclusion is tentatively reached that this departure from standard procedure has negligible effect upon the performance of the students.

TABLE I

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES ON THE  
AMERICAN COUNCIL OF EDUCATION PSYCHOLOGICAL TEST FOR  
TWO GROUPS OF STUDENTS IN EDUCATIONAL PSYCHOLOGY

PERCENTILE SCORES	Frequency First 100	Frequency Remaining 23
90-99.....	20	3
80-89.....	14	6
70-79.....	11	3
60-69.....	11	3
50-59.....	11	3
40-49.....	10	1
30-39.....	8	2
20-29.....	9	2
10-19.....	5	-
1- 9.....	1	-
Total.....	100	23

The data in Table I indicate that the students in the class include more in the top twenty per cent and fewer in the bottom twenty per cent than would be found in a representative group of college freshmen. The present paper is based upon data from the first 100 students who turned in reaction sheets indicating their attitudes toward intelligence tests and their reactions upon receiving their scores. The remaining twenty-three students did not turn in their response sheets and were therefore not included in the study. As indicated by Table I, the group not included were very similar in intelligence to those who participated in the study.

The 100 students included in the investigation were divided into four groups for purposes of further analysis of data. Group A included the twenty-five "brightest," with percentile scores ranging from 87 to 99; Group B included the next brightest fourth, with scores ranging from 68 to 87; Group C included the next-to-bottom fourth, with scores varying from 42 to 68; and Group D consisted of the bottom fourth, with percentile scores ranging from 5 to 42.

At the time they were given their test scores, the students were asked to fill out the reaction sheet, giving answers to five questions. The answers were given in three formal categories: "Yes," "?," "No." The tabulations of answers for the four groups are presented in Table II. From these tabulations one may note the following facts.

1. The students are overwhelmingly in favor of reporting the scores to pupils when they are tested. This is true for all groups, although a few students with low scores disapprove.
2. The great majority felt that they knew pretty well where they stood prior to being given their scores. About one in five felt that the scores did give some new information. Those who were doubtful often added comments suggesting doubt as to the accuracy of the test.
3. The students for the most part are not convinced that the test provides a measure of native capacity. The students with low test scores more often report that the test does not measure native capacity.
4. Many of the students do not believe that the test measures anything which has importance outside of school. This is especially true of those with lower scores. The students with higher scores more often report that "intelligence" as measured is important in non-academic situations.
5. The majority of students seem to believe that people could indulge in activities which would improve their scores on such a test. Many are doubtful of this, and about a sixth of the students feel that nothing could be done which would result in marked improvement of scores within a year or two.

## Free Comments

The comments freely offered by the students tend to supplement the information provided by the more objective portion of the response sheet. A sampling of the comments is given below. The number given at the

end of each comment is the total percentile score on the test for the student making the comment.

COMMENTS FROM GROUP D (Lowest Scores):

1. "The experience that I got was that there was no reaction as I didn't understand the results of scores given." (5)
2. "I do not think this test is a good indication of my intelligence or abilities, as I consider myself rather good in understanding and remembering what I read, see, or hear, in most of the things that appeal to me." (13)

TABLE II  
RESPONSES OF 100 COLLEGE STUDENTS TO QUESTIONS  
CONCERNING INTELLIGENCE TESTS

THE QUESTIONS	GROUP	ANSWERS GIVEN		
		Yes	?	No
1. In general, do you approve of telling students their scores on such a test?	A -----	24	1	0
	B -----	24	1	0
	C -----	21	2	2
	D -----	22	0	3
	Total -----	91	4	5
2. When you got your scores, did you find out anything you did not already know in a general way?	A -----	3	2	20
	B -----	5	2	18
	C -----	4	3	18
	D -----	6	6	13
	Total -----	18	13	69
3. Do you believe that the test given provides a measure of native capacity?	A -----	10	10	5
	B -----	9	5	11
	C -----	12	5	8
	D -----	3	7	15
	Total -----	34	27	39
4. Do you think that this test measures something very important in life outside of school?	A -----	14	8	3
	B -----	6	9	10
	C -----	9	4	12
	D -----	2	7	16
	Total -----	31	28	41
5. Do you believe that persons who get low scores on this test could do anything which would cause them to get high scores a year or two later?	A -----	16	6	3
	B -----	13	8	4
	C -----	19	2	4
	D -----	17	4	5
	Total -----	65	19	16

3. "I believe that the results depend too much on speed and on one's field of training. My linguistic score is low because I very seldom read unless it is a necessity." (18)
4. "I don't believe any I.Q. tests can measure your aptitude accurately (sic!)." (19)
5. "I was surprised at the score—didn't think that the score would be as low as it is. Actually, as the lecturer said, speed isn't the most important thing in testing an I.Q." (21)

#### COMMENTS FROM GROUP C (Next Lowest):

1. "Aside from being very disappointed in the result, I take the score with a large grain of salt. The correlation with my college work is good I think and seems to show something of validity. The low correlation with my 1943 Stanford-Binet leaves me a little in the dark. I'm looking forward to a chance to talk with you personally about it." (44)
2. "I was glad to get the information. It had no negative effect on me. I knew pretty well where I stood before I took it." (44)
3. "I enjoyed finding out because I've never known my I.Q. although I must have taken tests before in school. My scores were never revealed to me." (45)
4. "In telling students their scores I feel it should be done on a personal basis. Individual anxieties and questions could be talked out more beneficially then. It is important to learn about oneself." (52)
5. "I feel that your method of letting a student who is bothered by his score speak to you compensates for any harm that might be done." (65)

#### COMMENTS FROM GROUP B (Next to Top):

1. "I don't mind being told the results of the test. It is probably best that results are given separately to each individual. As this was the first such test that I had ever received the results from, I hadn't known just what to expect and was extremely curious about the results." (68)
2. "I knew I was above the 50th percentile, but was disappointed to find it was not as high as I hoped." (71)
3. "I didn't understand the meaning of the scores because they were not translated into I.Q. scores." (73)
4. "I appreciate being told the results of the test. I do not believe that a high or low score has too much influence on my personality. On the other hand, not knowing the results of a test would make me doubt the usefulness of taking the test." (73)
5. "My score was fairly high, and this renews my lagging confidence in my ability to finish college after four years' absence." (84)

#### COMMENTS FROM GROUP A (Highest Scores):

1. "This test confirmed a suspicion that I have held for several years. I must say ego has been depressed somewhat." (87)
2. "My reaction to being told the results of the test is a decrease of respect for the results of such measures. I already know my I.Q. and don't think it could have increased as much as is indicated by these scores. It is encouraging though." (87)

3. "I found it to be a very interesting experience to take a test of this type, and getting back the score bothered me less than getting back mid-term scores. I figure I can't be too dumb—I'm here." (88)
4. "It is important that one know his own capabilities and limitations in life. Keeping this type of information from a student would actually contribute to his moral weakness." (96)
5. "I am naturally interested in finding out the results of the test, but it doesn't really tell me anything. I scored 99 on each part, but I only get average grades, and my grade point average is only about 1.5. I don't see what the result really means. If it means that I am smarter than most students, why can't I understand things better? I often find myself reading the same sentence or paragraph over and over without being able to get any meaning out of it. Does the test score mean I have more ability than most students and just don't know how to use it? Or does it indicate I have an advantage because I do so much reading? I read and understand rather quickly, at times, when interested." (99)

Since the comments offered by the students would have totalled about twenty-five pages, it is obvious that only a small selection could be presented here. Care has been taken to offer a set of student comments selected to bring out the more prevalent views and the variety of ideas presented. Much repetition occurred, making possible representation of many by a few. However, one student view is not fully indicated by the sampling; at least six or eight students objected to the reporting of percentile scores, asserting that they are less "meaningful" than IQ's would be, and complaining because they were not told their IQ's. The writer interprets this as persistence of a viewpoint in spite of instruction.

The following descriptive and interpretative observations are offered in the light of all the comments offered by the students:

1. The students exhibit a great deal of common sense, emotional stability, and intellectual poise.
2. The students tend to interpret the test scores in the light of other data; such as, their college achievement records, the speed at which they customarily work, their scholastic drives, and the amount of studying they do.
3. Students tend to regard the test scores with a certain degree of respect, but they are critical of interpretations in terms of native capacity.
4. The students are not willing to accept as a true measure of their abilities and capacities any test which places great emphasis upon speed of performance.
5. The brighter and more experienced students tend to regard the "intelligence" test as measuring something which has practical significance in the world of work outside of school.
6. Bright students, as well as those receiving low scores, may be disappointed by the test results. Such disappointment may vary in relation to level of aspiration, tendency to accept or reject the test as significant, tendency to rationalize, and mis-interpretation of the scores.
7. Not one student in the group appeared to be profoundly shocked, or even bitterly disappointed. The prevalent tendency is to regard the test scores

critically, consider the information contained, and relate the test scores to other evidences of ability available to the student.

8. After conducting this investigation, the present writer feels that it is altogether a good idea to give college students complete and accurate information as to the results of intelligence tests administered to them. Care should be taken, of course, to give them suitable instructions first, and to discuss the results of the tests with individuals who desire to have personal interviews.

## Discussion and Interpretation

The suggestions presented in this article are not intended as conclusions to be accepted as final determiners of policy. They are offered tentatively, as a part of the evidence to be considered.

The results of this study tend to agree with findings of other investigators. For example, Lamson (2) concluded that informing students in the top twenty-five or thirty per cent of their decile positions on general intelligence tests is a desirable procedure in guidance. Here the suggestion is offered that precise scores might be given, that scores suggesting analysis be presented, and that the reporting should not be limited to those of superior intelligence.

Mitchell (3) conducted an experiment in which a group of high school students who were told their intelligence test scores were compared with another group who were not given such information. Both groups came from the lowest fourth in measured intelligence. The study indicated that scholarship of the students of low intelligence is much improved when they are given the information, along with a suggestion that persons with such low scores must put forth additional effort in order to succeed in school. One might add the suggestion that the low ability pupils who succeeded as a result of being given the information probably achieved a great gain in self-confidence by proving to themselves that they could succeed.

Ross (5) has pointed out that students who are not told their scores are not necessarily completely ignorant as to their abilities. It appears desirable to have some more research into the nature of attitudes concerning their ability which students hold in the absence of more objective information.

An experiment by Ross (6) has indicated that reporting test scores to college students of low ability has good effects upon achievement in college. One might add that similar effects may be expected from frank and tactful reporting to college students at all ability levels.

In agreement with a statement recently published by Bordin (1), one might suggest that all such reporting of intelligence test scores should be

done, if at all, by persons who are properly qualified. The present writer feels that the person reporting test scores to students should be a properly trained psychologist, or at least a teacher who has had extensive contact with psychological viewpoints. In order to avoid mis-interpretation, it is desirable for the teacher to know what the tests are supposed to measure, how valid the tests are in a variety of situations, what the common mis-interpretations are, what students in and out of psychology think about such test scores, and a great many other things which are commonly taught in courses in counseling, guidance, mental hygiene, tests and measurements, statistics, and child development. Possibly the teacher who wishes to use such tests in guidance should read the articles cited here, and perhaps begin reporting in a tentative and experimental manner. It is significant, however, that several investigators have collected evidence bearing upon the problem, and the data clearly indicate the desirability of frank and accurate reporting to the students who want to know their intelligence test scores.

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#### THE EDITORS SAY — How Straight Our Course?

*Continued from Page 50*

We are further admonished to use the calendar as well as the stopwatch as a measuring device in educational research; "too little too late" holds no greater dangers than "too much too soon." The true research scientist is less concerned with rushing into print than with thrusting into verity.

We are indebted to Dr. Brownell for his challenging essay. It will help to remind us of our obligation to steer a straight course in our research reporting.

# Senior High School Study Halls — Their Educational Function

WATT A. LONG

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THE incorporation of the study hall as an integral part of the organization pattern of senior high schools appears to have become a general practice with little thought given to its possible educational function. Although the study hall provides an easy method of programming students for every period of the day, it is doubtful whether this is sufficient reason for retaining its use as an administrative device.

From time to time educators have questioned the organization and administration of the study hall. One eminent educator, for example, compares the study hall to a corral into which young people are herded, often against their will, by seemingly uninterested teachers. The pupils accomplish little for the time spent.<sup>1</sup> The observation of two other educators is also worth noting:

One of the most distressing features of the study program during the years past has been "the study hall," usually an unattractive room in which a large number of children are herded, there to sit for 45 or 50 minutes under the watchful eye of an attendance officer, "keeper of the study hall" . . . Little or no attention is given to the group other than to keep them quiet and assure peace and quiet in the corridors . . . Most study halls are a total loss to a large percentage of the pupils.<sup>2</sup>

These criticisms and others point to the need for specific studies that aim toward the improvement of the study hall as an administrative device.

It is the general practice to program senior high school students for one study hall period each day. Since all of the schools included in this survey are organized on a six-period day, the majority of the students

<sup>1</sup> Judd, Charles H., *Education and Social Progress*. New York: Harcourt, Brace and Company, 1934. pp. 97-98.

<sup>2</sup> Woodring, Maxie N., and Fleming, Cecile W., *Directing Study of High School Pupils*. Bureau of Publications, Teachers College, Columbia University, 1935.

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spend one-sixth of their school time in study halls. It is reasonable to expect, therefore, that the organization and administration of the part of the day devoted to study halls will contribute to students' educational and social growth.

It has been an accepted philosophy of educators that the presentation of subject matter content constitutes only a part of the teacher's function in the total learning process. The preparation of the students for independent study is also a function of the teacher. It follows, therefore, that careful attention should be given to the planning of appropriate facilities and conditions for independent study as planned and initiated by the teacher in the directed study period. To do less would certainly hinder the effectiveness of the teaching carried on in the classroom.<sup>3</sup>

### Requisites of a Good Study Hall

The plans for the study hall must include careful consideration to the selection of personnel. Only those who are competent to direct and control young people should be chosen. Few students in senior high school have attained sufficient proficiency in independent study habits to carry on successfully even after they have had the help of their subject teachers. They frequently need the help of the study hall supervisor in diagnosing their difficulties and in developing desirable study habits.<sup>4</sup>

That some study halls are inadequate and wasteful of pupil time is a problem that should challenge the best thinking of educators. An intelligent effort should be made to determine the causes, and constructive steps should be taken to remedy such conditions. There has been justifiable criticism of the study hall in general, and the senior high school in particular, but little real effort has been made in recent years to investigate the conditions which determine their success or failure.

### Statement of the Problem

The problem which this study attempted to solve is best stated in the following questions: What are the external and internal conditions related to the organization and administration of senior high school study halls which affect the pursuit of satisfactory independent study by students who are assigned to study halls?

### Scope of the Study

The study was limited to a consideration of prevailing practices ob-

<sup>3</sup> Douglass, Harl R., and Mills, Hubert H., *Teaching in the High School*. New York: Ronald Press, 1948. p. 144.

<sup>4</sup> *Ibid.*, p. 145.

served in the organization and administration of senior high school study halls in certain selected California school districts. The specific problems included in the study were:

1. Purposes for which study halls were organized.
2. Attention given to planning the organization and administration of study halls by principals and teachers.
3. Relation of student concentration to the time of the school day in which the study hall period occurs.
4. Relation of student concentration to the number of students present in the study hall.
5. Relation of student concentration to the mental age and the intelligence quotient for the school.
6. Relation of student understanding of lesson assignments to efficiency in concentrating.
7. Effect of physical environment, such as seating, lighting, ventilation, and outside distractions, on the students' degree of concentration.

## Selection of Schools for the Study

Eight schools in three Bay Area cities were selected to represent eight different student populations in order to have a representative sampling for this study. The eight schools enrolled 13,389 students and had 71 study halls. For purpose of this survey, 53 of the study halls—representing every period of the school day from the first to the seventh—were observed. The total number of students enrolled in the 53 study halls was 2820.

## Procedure Used

The plans and procedure of the study were explained to each of the high school principals. However, none of the administrators, teachers, or pupils who cooperated in providing data for the study was informed of the ultimate objective of the survey. Each principal was asked to acquaint his faculty, who were supervising the study halls that were to be observed, with the procedure to be used in collecting information. He also asked them to perform their work in the accustomed manner and to cooperate with the observer in completing the questionnaire at the time observations were made.

### A. *Purposes of Study Halls*

The purposes for which study halls were organized, as revealed by information furnished by principals and teachers, varied to a considerable degree. The following reasons were given by the eight principals for maintaining study halls:

1. To help with homework assignments (5 schools).

2. For college prep students who carry three or more subjects (2 schools).
3. To give serious students an opportunity to study during the school day (2 schools).
4. A relief period from regular school work (2 schools).

The purpose of study halls is further indicated by the nature of the duties performed by study hall teachers. Eight principals listed the keeping of attendance and the maintaining of discipline as the principal responsibility of study hall teachers, while only three principals indicated that such teachers are expected to assist or give general direction to the students' study. Of the 53 supervising teachers, 39 reported that their study halls were inadequate. Thirty-one regarded the keeping of attendance and discipline as their principal study hall function, while 22 thought their function was to encourage efficient use of time, to help students with difficulties, and to encourage study.

### *B. Improving Study Halls*

The methods used by teachers to improve study halls also revealed their understanding of the purposes to be served by study halls. As an effort to improve their study halls, 24 teachers check carefully on attendance by means of seating charts and other devices; 20 teachers reported that they maintain good discipline; while three teachers did not attempt to make any improvements.

### *C. Organization and Administration of Study Halls*

The study showed that attention given to the planning of the organization and administration of study halls varied from school to school. Two schools, G and D, had prepared guides with suggestions of practices and procedures to be used in organizing and administering study halls. School G's guide was more extensive and better organized. One school reported that attention was given to the operation of study halls at regular staff meetings. Five schools had no specific plan or guide sheets relating to study halls. Only one school in the study had developed an orientation unit on "how to study" to prepare their students for study hall work. Seven schools reported that they left the problem of teaching students how to study to subject matter teachers. It was noteworthy that only one of the schools selected teachers for study hall supervision because of their known ability or educational qualifications.

### *D. Reaction of Study Hall Teachers and Students*

The concern of teachers regarding the planning of the organization and administration of study halls was revealed by the methods they used and the suggestions they made. Thirty-nine of the 53 teachers felt that the study halls they supervised provided a desirable atmosphere for individual study, while 14 were not satisfied with the organization and ad-

ministration of their study halls. The 14 teachers mentioned six conditions which contributed, in their opinion, to an unsatisfactory study hall atmosphere. Thirty-one teachers believed their function in the study hall was to keep attendance and maintain discipline, while 22 teachers were more concerned with ways and means of assisting students with their study problems. Forty-eight of the 53 teachers felt that they were competent to give students the necessary help; 70.9 per cent of the students contended that their study hall teachers had enough time to give help when requested. Expressing their desires for improved study halls, 138 students mentioned the need for less noise in study halls, while 60 pointed out the need for study hall teachers better equipped to supervise their students.

#### *E. Factors Affecting Concentration*

This study showed that students concentrate slightly better in earlier periods of the school day than in later periods. The index of concentration for the seven school periods starting with the first were found to be: 89, 90, 86, 86, 81, 84, 81. It is noted that the first four periods showed a significantly higher concentration index than the last three.

The number of students present in a study hall is a factor in student concentration. The study revealed that the highest percentage of concentration occurred in study halls ranging in size from 45 to 49 students. When the number of students exceeded 65, the index of concentration fell below 80 per cent.

Mental ability also appeared to have some relationship to student concentration. School G, which ranked first in concentration efficiency (91.3%), ranked seventh in mental age with a median of 14 years, 7 months. The high rank of School G was probably due to the careful screening of students assigned to the study hall. School E, which ranked second in concentration (90.7%), also ranked second in mental age with a median of 16 years, one month. The third rank went to School D with a concentration index of 88.1% and a median mental age of 16 years, one month. School C ranked fifth in concentration and seventh in mental age, but reported that study hall students are carefully screened.

Understanding an assignment was found to be one of the most important factors affecting student concentration. The school in which the students showed the best understanding of their lesson assignments had the highest index of concentration efficiency. Conversely, the schools in which students had the least grasp of their assignments were found to rank lowest in concentration.

#### **Recommendations**

The findings reported in this survey would seem to justify the follow-

ing recommendations which, if adopted, would help to improve senior high school study halls:

1. Senior high school principals should develop functional goals or purposes for study halls in keeping with the school's instructional program.
2. Study halls should not be used as detention rooms for students.
3. Principals and teachers should develop a handbook or unit for students on how to study and how to use the study hall period to the best advantage.
4. Consideration should be given to the professional training and experience in study hall supervision in selecting and assigning teachers to study halls.
5. Teachers should be assigned to study hall supervision for a semester or year, but not for periods of six or seven weeks.
6. Principals and teachers should cooperate in developing study hall guides for teachers, including suggestions for organizing and directing student activities in the study hall.
7. Principals and teachers should study the problem of lesson assignments in order to improve the student's understanding of the work he is expected to do in the study hall or at home.
8. The number of students assigned to a study hall in a given class period be limited to fifty.
9. The study hall should be located near the library and as far away as possible from noisy streets and playgrounds.
10. Special attention should be given in study halls to good lighting, proper ventilation, and adequate working space for students.
11. The study hall should have available, for ready use of the student, dictionaries and sets of standard encyclopedias.
12. The study hall period should be considered a part of the regular teaching load assigned to teachers.
13. Teachers should give the same attention to the planning of the study hall as they give to any school subject; the study hall period should not be used for clerical work or classroom preparation.

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Staticians for *Time Magazine* have come up with a simplified chart whereby American families can figure whether their income has kept pace in buying power with what it was in pre-inflationary 1940.

The man (with wife and two children) who was earning \$3000 in 1940 has to earn \$6072 today to be as well off as he was then. Of his \$6072, income taxes take \$816 (he paid no income tax in 1940), and it takes the remainder, \$5256, to buy exactly as much as \$3000 bought 11 years ago. The man earning \$5000 in 1940 paid \$75 in income tax, leaving him \$4925 in take-home pay. To have that same take-home pay today, he must earn \$10,542. Of his \$10,542, income tax takes \$1913, and dollar depreciation accounts for \$3704—leaving him the exact buying power that \$4925 gave him in 1940.

# Evaluation of the Guidance Services in the High Schools of Fresno County

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**P**ROGRAMS of guidance services in the sixteen high schools of Fresno County are relatively new. None was instituted more than five years ago. A large majority were begun during the past two to three years.

Recognizing the benefits which accrue from early evaluation, Fresno County Superintendent Walter G. Martin and Secondary Coordinator Charles F. Perrott applied for and were granted funds by the Rosenberg Foundation of San Francisco to underwrite a county-wide evaluation study. These funds were used to pay for the part-time services of a guidance specialist, a part-time secretary, and the necessary materials. An investigator (the author) was employed to carry it out.

## Purpose of Study

The study, begun in September 1950 and completed in June 1951, was undertaken to (1) evaluate the programs of guidance services in each of the sixteen high schools of Fresno County, (2) identify strengths which might be further strengthened and weaknesses which might be remedied, (3) present constructive suggestions concerning next steps to undertake, and (4) identify areas of guidance services which might be emphasized in an in-service training program.

## Procedures

The external criteria method of evaluation was used in making the study. A check list of one hundred fifty items representing practices generally considered desirable by authorities in guidance was prepared. Each school was then evaluated on the basis of the number of practices followed and the degree of efficacy of each practice.

Soon after the fall opening of school, each of the sixteen county high schools was visited to discuss the purposes of the evaluation and the pro-

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cedure to be followed. The administrators were asked to (1) assign four to six persons (including the administrator) to complete independently all the items in the evaluation check list, (2) through group discussion of individual evaluations, arrive at a consensus on each point, and (3) prepare a composite evaluation acceptable to all.

The composite evaluation was returned to the investigator who then spent one to three full days in each school completing a similar check list. He checked office records, personnel records, occupational and educational information files, library, counseling quarters, health service, orientation handbooks and other material, and school plant and facilities. He also discussed various aspects of the guidance program with the administrator, the counselors, and teachers and pupils selected at random.

After completing his evaluation check list on the basis of the interviews and observation, he met with the faculty committee which had prepared the composite check list to discuss all items on which there was a difference of opinion between the committee and the consultant.

The final evaluation report was sent to the administrators for further comments and then incorporated into a county-wide report based on an analysis of the sixteen individual schools' reports. Suggested topics for in-service training sessions were also derived from the analysis and those topics selected by the various schools were discussed at a series of twelve meetings held at various meeting places.

## Findings and Recommendations

Some of the more significant findings and recommendations from the analysis of the county-wide evaluation are briefly summarized below.

1. The administrators of the secondary schools of Fresno County are showing a high degree of interest in the development of programs of guidance services and fifteen, or 93.7 per cent, are well enough informed to provide the necessary leadership. A basic weakness in the leadership, however, is the tendency to plan and develop the program with the assistance of a few key persons on the staff rather than with the assistance of the entire school staff, the student body, and the community. It is recommended that future proposed developments of the program be made with the knowledge and as a result of faculty and student discussion and with the cooperation of the community.

2. Nearly every secondary school in the county, fourteen or 87.5 per cent, is attempting to develop a comprehensive system of records for use in counseling and instruction. Five of these fourteen are already providing better than average records.

The outstanding weaknesses in the present record systems are (a) lack of centralization, (b) lack of procedures for keeping the information current, and (c) lack of coordination between the elementary and the high schools in the transfer of cumulative records.

3. A very adequate program of standardized testing is provided in four, or 25 per cent, of the sixteen schools; a minimum program in five, or 31.2 per cent; and an inadequate program in seven, or 43.7 per cent. Greater dividends from the investment of time and money in the testing program could be secured if: (a) some uniform plan of recording results were adopted, (b) the results were recorded in all cases, and (c) provisions were made for distributing results to all teachers concerned. An in-service training program for teachers in the interpretation and use of test results would further enhance their value.

4. The generally accepted ratio of counselor time to student load, one period per day per each 50 to 100 students, is provided for or approached in seven, or 43.7 per cent, of the sixteen schools. However, the practice of assigning administrative and supervisory duties to the counselor to be carried on during counseling time detracts from the counselor's effectiveness and impinges upon the already limited time assigned for counseling.

5. Physical facilities for interviewing are average or better in twelve, or 75 per cent of the schools. The counselor's quarters range from the ideal of a large, private, attractively arranged and well-equipped office to that situation in which the counselor must arrange to do his work in a corner of his classroom where little or no privacy is possible.

6. Less than one third of the counselors are doing an average or better job of recording and filing interview results.

7. The secondary schools of Fresno County use a variety of sources of data about individuals. These sources in order of the frequency of their use by the schools are: personal data blanks, standardized test results, records from sending schools, individual interviews, autobiographies, periodic physical examination reports, scattergrams, home visits, rating scales, anecdotal records, daily schedules of activities or diaries, case studies, and sociometric studies. The first seven items are used by 50 per cent or more of the schools. The last six items are used by less than 50 per cent of the schools.

Specific suggestions for improving upon existing procedures in the use of these sources of data are offered in the study.

8. Informational services to individuals are weak in many cases. Only one half of the schools have set up occupational files and less than one half have books containing occupational information available in the library or the counselor's office. Current catalogs of schools and colleges in the area are maintained, however.

Informational services to groups are more adequate. Most teachers correlate occupational information with teaching of their respective subjects; a course or unit in occupations is taught in all but three of the schools; business and industrial visitations are provided in one-half the schools; and a county-wide career day is held annually.

9. None of the county schools provides for the placement of graduates and drop-outs.

10. None of the schools makes periodic follow-up studies of school leavers, graduates and drop-outs.

11. The county schools provide very adequately for pre-entry as well as post-entry orientation. All engage in spring visitations to the sending elementary schools for discussion and pre-registration, invite prospective enrollees to visit the school en masse, and after entry expose the new students to an orientation course and other activities designed to make them feel at home.

12. There is too little articulation between the elementary schools and the high schools. Some thought might profitably be given to the possibility of joint meetings between feeder and receiving schools for purposes of better understanding one another's objectives, programs, and problems.

13. About one-fourth of the schools are utilizing out-of-school services to an average or better degree. In order to encourage their wider use, it is recommended that a committee be appointed to prepare a list of federal, state, and county services which are available to schools and that, in addition, each school prepare a list of strictly local services which can be used in the task of assisting students with their adjustment problems.

14. There is a widespread feeling that the programs of guidance services have had favorable effects on curriculum, pupil retention, scholastic success, occupational and educational choices, and pupil self-direction. This feeling is based on observation rather than fact. It is recommended that individual schools initiate formal studies to determine more accurately these effects and their extent.

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#### 1952 STATEWIDE CONFERENCE ON EDUCATIONAL RESEARCH TO BE HELD IN OAKLAND

The Fourth Annual State Conference on Educational Research will be held at the Leamington Hotel, Oakland, on November 7-8, 1952. Chairman of the Program Committee is Dr. Jean D. Grambs of Stanford University.

# Nation-Wide Trends in Teacher Education and Certification

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**P**ROBABLY the greatest single motivating force in the study of teacher education-certification practices in recent years has been the Commission on Teacher Education of the American Council on Education. Following the initial leadership provided by the Commission on Teacher Education, the National Education Association established in 1946 its National Commission on Teacher Education and Professional Standards. As a result of the constructive stimulation generated by these organizations, a number of local, regional, and national studies on teacher education and teacher certification problems and practices have been made. The most exhaustive of these studies is one recently published by the United States Office of Education entitled "Certification Requirements for School Personnel."<sup>1</sup> From this report and others which have come to its attention, the Division of State Colleges and Teacher Education of the California State Department of Education has compiled a statement of Nation-Wide Trends in Teacher Education and Certification. A brief summary of these trends is the subject of this article.

Wherever appropriate or significant, in each of the statements of trends, there appears a comment on California's teacher education-certification program as measured by these criteria of national trends. A summary of Nation-Wide Trends in Teacher Education and Certification should be useful as a criterion to evaluate California's status in establishing standards designed to guarantee qualified personnel to teach the 1,800,000 youngsters in California's public schools.

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<sup>1</sup> W. Earl Armstrong and T. M. Stinnett, "Certification Requirements for School Personnel," Circular No. 290, U. S. Government Printing Office, Washington, D.C., 1951.

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Nation-wide trends appearing in increasing significance are:

1. *Requirement of five years of training for both elementary and secondary teachers.* The requirement of five years of training for both elementary and secondary teachers is being accomplished in several ways. Some states are adopting California's plan of five years of continuous preparation as required for a California general secondary credential since 1905. Other states are adopting plans in which, at the completion of a four year program culminating in a bachelor's degree, the teacher is granted a *probationary* certificate. This certificate may be converted into a *standard* certificate within three to five years by completing a fifth year of training. Indiana, Kentucky, Mississippi, Virginia and Washington are examples of states which have followed this policy.

2. *Discontinuance of issuance of certificates by examinations and the issuance of life diplomas.* At the present time only six states continue to issue certificates by examination. California discontinued the issuance of certificates by examination in 1945. In place of the life diplomas, states are adopting credentials which may be renewed every ten years. The ten-year renewal is based on teaching during at least one-half of the term of the life of the certificate and/or the completion of specified amounts of college or university work. California issued life diplomas as early as 1866, a practice which is still in force today.

3. *Reduction of the number of different types of certificates issued.* Reduction in the number of different types of certificates is being accomplished by endorsing all the teaching fields and other school services, which the holder is authorized to perform, on the initial certificate issued. In California, the use of State-wide committees, which are directed to begin their study of certification standards by job analyses of the functions performed by teachers, offers hope of further reduction of specialized credentials in California.<sup>2</sup>

4. *Centralization of certification authority in one agency in the State Department of Education.* During the last fifty years centralization of certification authority in the state department of education has steadily increased. Establishment of state authority in California was inaugurated in 1945. It is interesting to note that four states still permit the county superintendent of schools to issue certificates, three states still permit the state teachers college to issue certificates to their own graduates, and

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<sup>2</sup> Information about state-wide committees appears in the following: *California Schools*, November 1950, "Committee on Credentials for School Personnel Work," "Committees on Business Education and Physical Education," pp. 391-94; *California Schools*, December 1951, "Revision of Regulations Governing the Issuing of the State Public Health Nursing Certificate," pp. 446-47.

nine states authorize certain cities to issue certificates to their teachers. Several states, including California, permit certain bureaus within the State Department of Education, in addition to the Credentials Office, to control the issuance of certificates for teachers in their own field of specialization. This is particularly true of California credentials for teachers of federally reimbursed vocational classes.<sup>3</sup>

5. *Requirement of health certificates, citizenship, and personal recommendations.* As part of the application for a certificate, 22 states now require a health certificate, 27 United States citizenship, 26 a fee of from two to four dollars, 29 the recommendation of the institution where the applicant graduated, and 11 require definite assurance of employment in some position in the public schools of the state. One state, California, requires personal identification (fingerprint) cards as a requirement for certification. Oaths of allegiance are required by 21 states as a prerequisite for certification. Despite the present controversy over loyalty oaths, the number of states requiring oaths of allegiance for certification has remained constant for the past ten years.

6. *Requirement of specified amounts of general education as well as professional education.* For certification as a secondary teacher, 22 states require a pattern of general education which ranges from 25 to 60 semester units. The most usual amount is 45 semester hours. For certification as an elementary teacher, 20 states require a pattern of general education ranging from 28 to 85 semester units. The most usual practice requires 60 semester units. In professional education for elementary certification, the range is 16 to 36 semester units, with the most common requirement being 24. In California both the kindergarten-primary and general elementary credentials require 24 semester units of professional education. At the secondary level, the range in semester units required for professional education is 12 to 24, with 18 as the most usual specification. California's general secondary credential requires 24 semester units, that is, 22 plus 2 semester units of audio-visual education as a renewal requirement if not completed for issuance of the initial credential. California is unique in the requirement of audio-visual education for all teachers. The range in requirements for student teaching is 2 to 12 semester units, with 6 semester units as the most common requirement. Maine alone requires

<sup>3</sup> California credentials requiring the recommendation of special bureaus before issuance by the State Board of Education include: Special Secondary Credential in Vocational Agriculture, Special Secondary Limited Credential in Agriculture, Special Secondary Limited Credential in Vocational Business Education, Special Secondary Limited Credential in Industrial Arts Education, and all Vocational Credentials in Trade, Industrial and Public Service Education and the Military Science and Tactics Credential, which requires the recommendation from the Adjutant General of the State of California.

no student teaching. California's kindergarten-primary and general elementary credentials require 8 semester units; the general secondary, 6 semester units.

7. *Reciprocity between states.* Within the past several years, there has been marked activity toward reciprocity in certification among various states. Reciprocity involves the recognition, at the bachelor's degree level, by one state of another state's certification standard. As applied to California, it would mean that a teacher in Arizona, who held an elementary certificate issued on the basis of training completed at the bachelor's degree level, could be issued an elementary credential in California upon application. In a study by the National Commission on Teacher Education and Professional Standards of the National Education Association, 39 states were reported to have either "*formal or informal reciprocity compacts.*"<sup>4</sup> In general, reciprocity is being achieved in one of the following three ways:

1. An automatic exchange of certificates, as was practiced in the 1920's by New York and adjacent states.
2. The development and adoption of similar certification standards in contiguous states, as practiced by 19 of the states in the North Central Association accrediting area.
3. The legal adoption of reciprocity compacts by State Boards of Education. Such a plan is exemplified in the "Eight-State Reciprocity Compact," which includes the New England States, New York, and New Jersey.

In meetings of the National Association of State Directors of Teacher Education and Certification, the California State Department of Education has participated in the discussion of plans looking toward reciprocity. California's lack of residence requirements and similar barriers to reciprocity constitutes a form of reciprocity. The last semblance of a residence requirement for out-of-state teachers was eliminated by the 1949 session of the California Legislature when it removed the regulation of having to complete *in California*, a course on the United States Constitution.

8. *Development of conversion programs.* With the recognition of the oversupply of candidates for secondary teaching certificates in most states and the continued shortage of qualified elementary teachers, 16 states have developed programs for transferring, or "converting" secondarily trained teachers to elementary teacher education. The programs range from a six weeks summer session experience to a full year of post-bacca-

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<sup>4</sup> T. M. Stinnett, "Reciprocal Relationships in Teacher Education-Certification," National Council on Teacher Education and Professional Standards, NEA, Washington, D.C., 1949 (mimeographed).

laureate training.<sup>5</sup> In July 1949, California adopted a conversion program based upon the holding of a general secondary credential plus completion of six semester hours of specific work in elementary education including student teaching.

9. *Improved standards for administration credentials.* States are tending toward requiring three years of training beyond the bachelor's degree for the highest administration certificate. The California general administration credential requires the completion of 60 semester units beyond a bachelor's degree. In a recent meeting of the National Association of State Directors of Teacher Education and Certification, the belief was expressed that authorization for administration services combined into one certificate might be more desirable than adopting separate standards for elementary and secondary administration. Since 1923, California has maintained credentials for elementary administration, secondary administration, and general administration.

10. *Integration of elementary and secondary teacher education programs.* Integration of the preparation of elementary and secondary candidates is being accomplished through one of four devices:

1. By adopting a common standard of certification for both elementary and secondary teachers. An example of this is the state of Washington's five-year program which requires preparation in both elementary and secondary education and authorizes the candidate to teach at both levels. Until 1936 California's general secondary credential authorized service in all grades of any junior college, senior high school, junior high school, or elementary school. One of the main reasons for discontinuance of this common standard in California was that no elementary preparation was required for its issuance.
2. Teacher education institutions are requiring a common core in psychological and sociological foundations for all students with specialization confined to methods seminars and student teaching. This is common practice in many California teacher education institutions.
3. By encouraging dual certification. The institution's teacher education program is so designed that upon graduation the candidate has completed the requirements in that state for *both* an elementary certificate and a secondary certificate. Such a plan requiring five years of preparation has been in operation for many years at the University of Cincinnati for persons desiring to qualify for employment in the Cincinnati public schools. The possibilities of a similar plan in California might be a worthwhile problem for investigation by the California Council on Teacher Education.
4. By adopting conversion programs as described in Section 8. During 1951, ten California teacher education institutions offered summer session courses specifically designed to prepare candidates holding the general secondary credential for elementary school teaching.

<sup>5</sup> "Post-Baccalaureate Programs for the Preparation of Elementary Teachers," National Commission on Teacher Education and Professional Standards, National Education Association of the United States, Washington, D.C., 1949.

11. *Certification of non-teaching personnel.* With the tremendous expansion in recent years of educational services provided by the public schools, many states have been adopting certification plans for their non-teaching personnel. Non-teaching personnel include business managers, supervisors of school budgets, research workers, librarians, school cafeteria managers, supervisors of health services (nurses, audiometrists, dentists, chiropodists, dental hygienists, otologists, oculists, optometrists), pupil personnel workers (deans, counselors, visiting teachers, child welfare and attendance workers, psychologists, psychometrists, and social workers). A review of credentials authorizing public school service in California indicates that California certifies practically all non-teaching personnel. California abandoned a credential in school research and a credential in school counseling in 1941, when an attorney general's opinion declared them illegal. The California Education Code contained no provision for the establishment of such types of credentials. The most marked trend today in the pupil personnel field is evidenced in the movement toward the certification of school counselors. A survey in 1949 showed that fifteen states had adopted requirements for school counselors.<sup>6</sup> A recent nation-wide survey indicates that the number was increased to twenty-two.<sup>7</sup> In this latter survey, California was listed as "studying the problem." The California State Committee on Pupil Personnel Credentials, appointed by the State Superintendent of Public Instruction in 1949, has now completed its study, and the Committee's recommendations to the State Department of Education for the establishment of a *general* pupil personnel credential will be published in bulletin form in the near future under the title "Preparation and Certification of Pupil Personnel Workers."<sup>8</sup>

12. *Nationalization of accreditation of teacher education.* The present state of duplication in the area of general accreditation and accreditation for teacher education is resulting in a trend toward the nationalization of accreditation for teacher education. The most recent announcement in this regard is the proposal for the establishment of a National Council on Accreditation, which has been tentatively endorsed by the National Association of Chief State School Officers and the National Association of State Directors of Teacher Education and Certification. The American

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<sup>6</sup> Stone, James C., "Credentials for Pupil Personnel Workers," *California Journal of Secondary Education*, January, 1950.

<sup>7</sup> Kremen, Benjamin G., "A National Study of Counselor Certification," Unpublished Doctor's dissertation, Michigan State College, Ypsilante, Michigan, 1951.

<sup>8</sup> A statement of the functions of this state-wide committee and its members appears in *California Schools*, November 1950, "Committee on Credentials for School Personnel Work," James C. Stone, pp. 391-94.

Association of Colleges for Teacher Education has recently inaugurated a visitation accreditation program on a national basis.<sup>9</sup> Since July 1942 the California State Board of Education has had a Committee on Accreditation which regularly visits California institutions for accreditation and/or reaccreditation. At the present time there are 36 institutions accredited for teacher education by the California State Board of Education.

13. *Increased role of the classroom teacher.* Increased professional consciousness is resulting in a greater recognition of the role of the classroom teacher in determining programs of teacher education, certification requirements, and standards of accreditation. The establishment of the National Commission on Teacher Education and Professional Standards by the National Education Association in 1946 gave goal and direction to this movement. The California Teachers Association's Committee on Teacher Education and Professional Standards parallels in California similar developments which have been effected by the organized profession in other states. The establishment of the California Teachers Association's Commission on Teacher Education with a full-time Secretary for Teacher Education will give further impetus to the important role of the classroom teacher in determining standards for the profession.

Nation-Wide Trends in Teacher Education and Certification reflect a new spirit in national unity and cooperation among educational organizations, professional institutions, and state departments of education. The progress made in the past five years depicts a vigorous drive which is binding all educational groups together in the common determination to improve teacher education and certification standards and practices.

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<sup>9</sup> Lovinger, Warren C., "American Association of Colleges for Teacher Education to Begin Visitation of Member Institutions," *Journal of Teacher Education*, 6:273, Dec. 1950.

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## SIZE OF FAMILIES IN THE UNITED STATES

In 1950, of the nation's nearly 40 million families, about half are families without any children of their own under 18 years of age. One-fifth have one own child under 18 years of age; one-sixth have 2 own children; and only 14.1% have 3 or more own children under 18. Despite the recent upturn in birth rate there was no child under 6 years of age in 70.5% of the nation's families in 1950, and only one child under 6 in 18.5% of them. — (Excerpt from *Schools and the 1950 Census*, NEA Research Bulletin Vol. 29, No. 4, December 1951, pp. 147-48)

# An Appraisal of Innovations in Elementary Classroom Planning and Design

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**I**MMEDIATELY following World War II, and even during the war, conditions began to develop which indicated desperate times ahead in the area of schoolhouse construction. Economic changes, social changes, mass migrations of the general populace, greatly increased birth rates, and numerous other pressures all posed new and serious schoolhousing problems for educators and the public. Schoolhouse construction suddenly and almost overwhelmingly became one of the leading educational problems to be met and solved.

The need for more rapid means of construction and less expensive types of construction have combined to force innovations upon the scene. The advent of new materials of construction and a new concept or philosophy of schoolhouse planning and design made it both possible and necessary for schoolhouse planning consultants and architects to develop some really significant innovations.

## Problem

The problem of this study was three-fold: (1) to determine, insofar as possible, if there were innovations in elementary classroom planning and design; (2) to discover to what extent these innovations were being incorporated into new elementary classroom construction; and (3) to appraise the functional value of these various innovations where and if they were found.

## Procedure

The general procedure of the study was first to make a critical survey of opinion as found in the literature of the field to determine what were the innovations in schoolhouse planning and design, especially with reference to the elementary classroom. The literature included general litera-

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ture, research studies, and published and unpublished documents and pamphlets.

Following the collection of data on innovations an appraisal-questionnaire was carefully prepared and distributed. These innovations in design and planning were assembled, catalogued, and appraisals were then obtained where appraisals were available. The purpose of this appraisal-questionnaire was (1) to determine how widely these innovations were being accepted in practice; (2) to discover other innovations; and (3) to appraise the functional value of the innovations being incorporated into the elementary classroom planning and design.

## Findings

The following are the findings resulting from this study and appraisals of existing innovations in elementary classroom design.

1. A new philosophy of elementary classroom planning and design seemed to be well in evidence with schools and classrooms being planned from the "inside out." There is a definite trend to include all who are in any way related to the ultimate use of the school plant as part of the planning team. This was demonstrated by the fact that 79 per cent of the schools placed instructional staff members on planning boards and 37 percent of the schools assigned members of their custodial staff to planning boards. Planning personnel and methods were appraised as satisfactory or very satisfactory by 89 per cent of those who responded.

2. An effort to produce the maximum utilization of daylighting was clearly evidenced in a number of ways. There is a predominance of the one-story, single-loaded corridor in the elementary schools of today. With but few exceptions this design has been appraised as functionally satisfactory, with 99 per cent of those who responded to this item satisfied or very satisfied. In 94 per cent of the schools bi-lateral lighting was regarded as satisfactory or very satisfactory. Multi-lateral lighting was appraised as satisfactory or better in 89 per cent of the schools.

3. The outdoor classroom area adjacent to the classroom proper has been an innovation in most recent elementary classroom construction, especially in Southern California. In 89 per cent of the schools employing this device, it has been appraised as satisfactory or better.

4. There is an almost universal dependence on natural methods of ventilation in California as contrasted with mechanical ventilation systems. In this study 83 per cent of the schools appraised such natural ventilation as satisfactory or very satisfactory.

5. Flexibility and adaptability are concepts of design emphasized in modern elementary classroom design. The predominate use of single-

loaded corridors contributes much to flexibility; 82 per cent of the schools built were of the single-loaded corridor plan. Of these, 59 per cent were very well satisfied and 40 per cent were satisfied. The square classroom area was reported by 63 per cent of the schools and designated as satisfactory or better by 100 per cent of these schools. Forty-eight per cent of the schools reported non-load bearing partitions between classroom partitions, and 49 per cent of these schools considered this method of construction very satisfactory and 51 per cent as satisfactory. Mobility of storage facilities makes for flexibility and adaptability; of the 92 schools having some movable storage areas, 82 per cent declared them to be satisfactory or better. Of the 56 per cent of schools which reported having between 20-39 linear feet, all but 10 per cent were satisfied with this amount. There were 19 per cent of the schools using some reversible board and all appraised it as satisfactory or better.

6. Pupils' wardrobe facilities are being provided in each classroom in most modern elementary schools and were almost unanimously appraised as satisfactory or very satisfactory. The classroom work area has incorporated a sink in 96 per cent of the schools, and a drinking fountain in 80 per cent, as part of this service area; these two facilities were appraised by all but one per cent as satisfactory or very satisfactory. In 49 per cent of the kindergartens a room toilet is provided and appraised by 89 per cent of these schools as very satisfactory or satisfactory. A definite trend toward providing inter-communication systems on the elementary classroom level was noticed, with 49 per cent of the schools reporting using a system. Systems were appraised as satisfactory or very satisfactory by 88 per cent of the users. Evidence was found that more classrooms are being provided with audio-visual service outlets and various means for darkening the room. Traverse curtains were reported by 28 per cent of the schools and rated as satisfactory by all but 9 per cent of the users. Service outlets were provided in two or more walls in 87 per cent of the schools.

7. A wider use of color in a more decorative manner in the typical elementary classroom was revealed. In 21 per cent of the schools a contrasting color was used on one or two walls. All who reported this scheme considered it to be satisfactory or better. In 86 per cent of the schools colors were selected under lighting conditions to be used and 98 per cent of these schools appraised the results as very satisfactory or satisfactory.

8. The almost universal use of the green composition chalkboard has testified to its functional value. Users are almost unanimous in agreement on its satisfactory qualities with 84 per cent of the schools reporting green chalkboard; 93 per cent of these schools were well satisfied with results. New colors in chalkboard are appearing on the scene in increasing numbers and appear to be quite satisfactory.

9. Fixed exterior louvers were employed by 46 per cent of the schools. These were appraised by all except 10 per cent as satisfactory or very satisfactory.

10. Radiant panel heating was featured by 51 per cent of the schools and rated satisfactory or very satisfactory by 97 per cent of the users.

11. In 67 per cent of the schools, perforated acoustic tile was placed on the ceilings and appraised as satisfactory or better by all. Wall surfaces received some acoustical treatment in 34 per cent of the schools. Acoustical engineering services were employed by 54 per cent of the schools.

12. The use of asphalt tile as a floor covering has become almost a standard practice with 92 per cent of the schools reporting its use. It was rated satisfactory or very satisfactory in 83 per cent of the cases.

13. Incandescent lighting is now efficient and economical and was used by 94 per cent of the schools. The results were considered to be satisfactory or very satisfactory in 94 per cent of the schools using incandescent lighting. Automatic light controls have not had wide acceptance in schools and only 3 per cent of the schools reported some type in use. The services of a lighting engineer were sought by 81 per cent of the schools.

14. New developments in "daylight" type projection screens have not been entirely satisfactory and more study needs to be given to this problem since about 55 per cent of the present users are not satisfied with results. The noise of passing airplanes seems to offer a problem which may not be too easy to cope with; 17 per cent of the schools reported some disturbance of this sort. Only 20 per cent reported disturbances of any kind.

## Recommendations

These recommendations are made: (1) More consideration should be given to the problem of better design for double-loaded corridors. (2) In the light of all evidence available, it appears important that more acoustical treatment should be given to wall areas. (3) School planners and planning consultants should strive to avoid a stereotype plan for every district regardless of the merits of a plan. Flexibility in design within the boundaries of sound architectural practice is to be desired. Creative individuality should be encouraged. (4) Techniques and devices in natural ventilation should be given more study and research in order to prevent cross drafts and still provide adequate ventilation. (5) More consideration should be given by planners and designers to the use of modular, movable storage facilities. (6) The elimination of large gang

toilets and the use of more room toilets at all elementary levels is recommended. (7) More consideration should be given to the addition of a hot-water outlet at the sink area. (8) Additional research and study should be given to the development of a more adequate and efficient daylight type projection screen. (9) The visual efficiency of pastel colored chalkboards needs serious study. Certainly the classroom decorative scheme can be enhanced by this material if it proves satisfactory in all other ways. (10) A study should be made of the use of the typical elementary classroom chalkboard receives to determine objectively, if possible, the amount needed in linear feet. (11) Finally, those who are responsible for elementary classroom planning and design should become better acquainted with the latest developments in the use of materials of construction, various devices, and types of design.

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## Book Reviews

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### Teaching the Language Arts

WILLARD F. TIDYMAN and MARGUERITE BUTTERFIELD.

New York: McGraw-Hill Book Company, 1951. 433 pages.

This text was written, according to the authors, to meet the need for a book which embodies research and current thinking, and incorporates the accumulation of scattered source material. The text begins with a survey of recent and present practices, which is followed by a consideration of the general problems of organizing and planning a language arts program. Specific phases of the language problem are taken up next. Generalizations, based upon a wealth of concrete illustrations, substantiate the text's inductive approach. Thought-provoking questions and practical exercises are provided throughout the book to stimulate independent thinking and study.

### Social Treatment in Probation and Delinquency

PAULINE V. YOUNG. New York: McGraw-Hill Book Company, 1952. 536 pages.

This is the second edition of a comprehensive textbook which was first published in 1937. The foreword to both editions was written by Roscoe Pound, visiting professor of Law at the University of California at Los Angeles. He contends that the author, a research sociologist and lecturer, has brought together in her volume a body of well-organized, well-documented, well-thought-out, and well-matured materials on one

of the most far-reaching and difficult of the services which the state of today undertakes.

The book is divided into four parts: (1) the social case study of unadjusted youth and parents; (2) legal aspects of probation; (3) dynamics of social therapy in work with unadjusted youth and parents; and (4) utilization of community resources in the work with unadjusted youth and parents.

The book is recommended as a useful text for students, social workers, sociologists, political scientists, and lawyers. It should also interest guidance and counseling personnel in public schools.

### **Educational Supervision**

CHESTER T. McNERNEY. New York: McGraw-Hill Book Company, 1951. 341 pages.

In this volume the author first defines modern supervision and then proceeds to discuss problems, and techniques for solving them, that the supervisor encounters in his relationships with the various classifications of school and community personnel and organizations. The advantages of democratic group action are constantly promulgated, and numerous examples of techniques for stimulating such action are presented. The viewpoint throughout the book is modern, and practical problems and situations are stressed. The concluding chapter describes the type of supervision which will be needed in the days to come. This book should be of interest to any and all who have supervisory responsibilities.

### **Teaching the Meanings of Arithmetic**

C. NEWTON STOKES. New York: Appleton-Century-Crofts, Inc., 1951. 531 pages.

As the title implies, this book emphasizes the teaching of *meanings* of arithmetic. According to the editor, J. Murray Lee, the teaching of meanings of arithmetic has been one of the most discussed subjects in the profession. But, like the weather, no one has done much about it! He believes that the book actually shows how meanings can be taught.

The book consists of four parts. Part I presents the theory of arithmetical meanings; Part II is entitled "The Ground for Action in Learning" and deals with the "what" of arithmetical understandings; Part III, on "The Rationale of Procedures," discusses technics of instruction, problem-solving, pacing of instruction, and evaluation of learning. Part IV, "Arithmetic Meanings Applied to the Classroom," implements the curricula set forth in Part III with a series of step-by-step developmental programs for children in the various age groups. The editor contends that the proper use of this book could revolutionize the teaching of arithmetic in a very short time.

